SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
HPR, Schedule 1

Revision date 12-Apr-2024 **Revision Number** 1

1. Identification

Product identifier

Product Name Lithium Standard: 10000 µg/mL Li in 5% HNO3 [100ml bottle]

Other means of identification

Product Code(s) 5190-8408

Recommended use of the chemical and restrictions on use

Recommended use Reagents and Standards for Analytical Chemical Laboratory Use

Restrictions on use No information available

Details of the supplier of the safety data sheet

Initial supplier identifier

Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA

800-227-9770

E-mail pdl-msds_author@agilent.com

Emergency telephone number

Emergency Telephone
CHEMTREC®: 1-800-424-9300

2. Hazard identification

Classification
Classification according to WHIMIS

Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity — repeated exposure	Category 2
Corrosive to metals	Category 1

Label elements

Danger

Hazard statements

Classification according to WHIMIS
Causes severe skin burns and eye damage
May cause damage to organs through prolonged or repeated exposure
May be corrosive to metals

Precautionary Statements - Prevention
Do not breathe dust, fume, gas, mist, vapors and spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves, protective clothing, eye protection and face protection
Keep only in original packaging

Precautionary Statements - Response
Immediately call a POISON CENTRE or doctor
Eyes
Immediately call a POISON CENTRE or doctor
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]
Wash contaminated clothing before reuse
Inhalation
IF INHALED: Remove person to fresh air and keep comfortable for breathing
Immediately call a POISON CENTRE or doctor
Ingestion
IF SWALLOWED: rinse mouth. Do NOT induce vomiting
Spill
Absorb spillage to prevent material damage

Precautionary Statements - Storage
Store locked up
Store in corrosion resistant container with a resistant inner liner

Precautionary Statements - Disposal
Dispose of contents and container to an approved waste disposal plant

Other information
No information available.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical nature aqueous solution.

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Nitric Acid	7697-37-2	0 - 10%	-	
Lithium carbonate	554-13-2	0 - 10%	-	

Additional information
The concentration of the acid stated in this SDS is calculated as an absolute mass concentration (%w/v). This is less than the acid concentration stated on the product label and COA, which reflects a percent value of the commercially available concentrated aqueous form of the acid.

4. First-aid measures

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical attention.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical attention.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention.

Ingestion Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical attention.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to doctors Product is a corrosive material. Use of gastric lavage or emesis is contra-indicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

5. Fire-fighting measures

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other information Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labelled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Please refer to the manufacturer's certificate for specific storage and transport temperature conditions. Store only in the original receptacle unless other advice is given on the CoA. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

Chemical name	Alberta	British Columbia	Ontario	Quebec
Nitric Acid 7697-37-2	TWA: 2 ppm TWA: 5.2 mg/m³ STEL: 4 ppm STEL: 10 mg/m³	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm STEL: 4 ppm	TWA: 2 ppm TWA: 5.2 mg/m³ STEL: 4 ppm STEL: 10 mg/m³

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Avoid contact with eyes. Wear safety glasses with side shields (or goggles). Tight sealing safety goggles. Face protection shield.
Hand protection	The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374. Wear protective Neoprene™ gloves. Wear suitable gloves. Impervious gloves.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Environmental exposure controls	Do not allow into any sewer, on the ground or into any body of water.
General hygiene considerations	Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Wear suitable gloves and eye/face protection. Regular cleaning of equipment, work area and clothing is recommended. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Liquid
Colour	colourless
Odour	Odourless
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	No data available	None known
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	None known
Relative vapour density	No data available	None known
Relative density	No data available	None known

Water solubility	No data available	None known
Solubility in other solvents	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

Explosive properties	No information available.
Oxidising properties	No information available.
Softening point	No information available
Molecular weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity

No information available.

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Oxidising agent. Acids. Bases.

Hazardous decomposition products None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns.

Ingestion Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	52,500.00 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-dust/mist)	99,999.00 mg/l
ATEmix (inhalation-vapour)	50.00 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Nitric Acid 7697-37-2	-	-	= 2500 ppm (Rat) 1 h ATE (vapours) = 2.65 mg/L
Lithium carbonate 554-13-2	= 525 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	> 2.17 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye damage. Causes burns.

Respiratory or skin sensitisation No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard No information available.

12. Ecological information

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Lithium carbonate 554-13-2	-	LC50: =30.3mg/L (96h, Oncorhynchus mykiss)	-	-

Persistence and degradability No information available.

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Nitric Acid 7697-37-2	-2.3

Other adverse effects No information available.

13. Disposal considerations

Disposal methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

14. Transport information

TDG

UN number or ID number	UN2031
UN proper shipping name	Nitric acid mixture
Transport hazard class(es)	8
Packing group	II
Marine pollutant	NP.
Description	UN2031, Nitric acid mixture, 8, II

DOT

UN number or ID number	UN2031
Extended proper shipping name	Nitric acid mixture
Transport hazard class(es)	8
Packing group	II
Reportable Quantity (RQ)	(Nitric Acid: RQ (kg)= 454.00) Nitric Acid: RQ (lb)= 1000.00
Reportable quantity (kg) (calculated)	Nitric Acid: RQ (kg)= 7567.00
Reportable quantity (lbs) (calculated)	Nitric Acid: RQ (lb)= 16667.00
DOT Marine Pollutant	NP.
Description	UN2031, Nitric acid mixture, 8, II
Special Provisions	A6, B2, B47, B53, IB2, T8, TP2
Emergency Response Guide Number	157

MEX

UN number or ID number	UN2031
UN proper shipping name	Nitric acid mixture
Transport hazard class(es)	8
Packing group	II
Description	UN2031, Nitric acid mixture, 8 , II

IATA

UN number	UN2031
UN proper shipping name	Nitric acid mixture
Transport hazard class(es)	8
Packing group	II
ERG Code	8L
Description	UN2031, Nitric acid mixture, 8, II

IMDG

UN number	UN2031
UN proper shipping name	Nitric acid mixture
Transport hazard class(es)	8
Packing group	II
EmS-No.	F-A, S-B
Marine pollutant	NP
Description	UN2031, Nitric acid mixture, 8, II

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

TSCA	LGC, to the best of its ability, has confirmed that the chemical substances in this product are listed as “Active” in the EPA (Environmental Protection Agency) “TSCA Inventory Notification (Active-Inactive) Requirements Rule” (“the Final Rule”) of Feb 2019, as amended Feb 2021.”.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AIIC	Contact supplier for inventory compliance status.

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

16. Other information

NFPA	**Health hazards**	3	**Flammability**	0	**Instability**	0	**Special hazards** -
HMIS	**Health hazards**	3 *	**Flammability**	0	**Physical hazards**	0	**Personal protection** X

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision date 12-Apr-2024

Revision Note No information available.

Disclaimer

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End of Safety Data Sheet